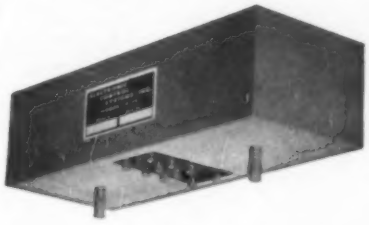
INDEX to ISA JOURNAL VOLUME 9, 1962

This is a quick-reference index to all the technical articles and the major Society events and reports which were published in Volume 9 during 1962. The index is in three parts for your convenience: Part 1. Monthly Contents (below); Part 2. Author's Alphabetical Listing and Part 3. Subject Index (next page). Page number following the title, author, or subject is the first page of the article.

INDEX TO ARTICLES BY MONTH

Title	Page
January 1962	
Basic Control Considerations	26
Our 8th Birthday	29
What Are Strain Gages—What Can They Do?	30
Instrument Business—Good for '62	37
Honeywell's New Aerospace Facility	40
How Diodes Simplify Circuits	42
Linking Computers to Analyzers in Real-Time Process Control	44
Keep Your Instrument Motors Running	48
Oceanographic Requirements vs Instrumentation Capabilities	50
Improving Technical Information Through ISA Divisional Membership	55
Why A Senior Member?	58
February 1962	
Frequency Response Analysis	25
Making Information Useful	29
Adaptive Three-Mode Controller	30
What Is Instrumentation?	34
Pneumatic Vs Electronic	37
Spotlighting Pneumatic Actuator Characteristics	41
Analyzing Gas Mixtures On-The-Spot	44
Checking Salary Levels of Chemists and Chemical Engineers	46
Strain Gage Types and Basic Circuits	47
March 1962	
Coming of Age	23
Computing Simple Functions with Strain Gages—No Strain!	42
Wealth of Statistics for Industry	47
Cardiac Pacemaker	51
Testing Flow Elements—Before Purchasing!	52
In-Place Instrument Calibration	54
Control System Stability	58
An Electronic Process Simulator	60
Wanted: Installation and Calibration Standards	64
April 1962	
Let Man Take Over	37
Laying A Foundation for Instrument Market Analysis	38
Semi-Automatic Curve Follower	42
Why Taut-Band Suspension?	44
On-Off & Proportional Control Modes	48
Basic Strain Gage Instrumentation	50
Who Develops Analyzers?	58
May 1962	
Which Direction?	18
Averting The "Measurement Pinch"	31
Getting An Open Hearth Control System To Work!	32
College Summer Courses, Symposia, and Seminars	35
Semiconductor Strain Gages—What Can They Do?	38
Making Major Management Decisions	41
Reset and Rate Control Modes	46
The Differential Transformer—Its Main Characteristics	48
June 1962	
Proposal for ISA Action	14
On Selling Instruments	24
Electrostatic Rocket Propulsion	25
Sources of Instrument Error	29
Signal Conditioning for Semiconductors	33
Combinations of Control Modes	35
The Differential Transformer—Its Applications and Circuits	37
Smash Hit on The Moon!	40
Tomorrow's Power—From What Sources?	42
Industry Meets in Wilmington for Chemical-Petroleum Parley	45
July 1962	
The Pervasive Technique	9
Engineers' Report Seeks Focus for Future Effort	14
Low Voltage Ignition of Hazardous Atmospheres	20
The Hydraulic Bridge	33
The Development of Flame Sprayed Sensors	35
How Analyzer Dynamics Affect Control	39
Choosing Reliable and Practical Electronic Controls	43
Five Professors, Twelve Students Honored (FIER Awards)	47
The Laplace Transformation	49
ISA Power Symposium Big Success	55
Pulp & Paper Symposium Report	62
August 1962	
Cost, Performance and Instrumentation	13
Orbital Rendezvous Control	33
A New ISA Guide to Transducers	39
Planning for Process Control	43
Strain Gaging on a Large-Scale Basis	47
Transfer Functions and Block Diagrams	51
Improving Technical Training	53
September 1962	
What Is Control?	8
Industrial Dynamics	60
Management Views The Understanding Gap	77
Determining Control Variables	81
Telemetering Channel Sharing for Electrical Utilities	85
Closing The Loop	87
Thermocouple Well Design	89
Analog Detection and Digital Counting for Quality Control	95
Temperature Compensation for Oxygen Measuring	96
Using Strain Gages for Repair	96
ISA Instrument-Automation Conference & Exhibit Program	99
Nominees for ISA Executive Board	117
Do You Know Your ISA Transactions Editorial Board?	122
October 1962	
Harbingers of the Future	7
A Process-Stream Refractometer	49
Recognizing the Technician	51
Hurricane Carla's Lessons for Process Instrument Engineers	53
A Manometer for Rocket Fuels	55
Realistic Estimates of Error	57
Choosing Process-Control Valves	59
Controller Mode Selection	61
Comparing Second-Order Systems	63
Two Analyzer Sampling Valves	64
Marmy Eyeballs The Valve	67
ISA Honors and Awards	78
1962 ISA Fellows	81
President's Annual Report	84
November 1962	
Time-Shared Digital Process Control	53
A Satellite Computer for Control	57
Designing Pneumatic Analog Computing Systems	65
Optical Trackers in Space	70
Choices for Instrument Progress	74
Controller Settings and Tuning	78
Training Instrument Mechanics	81
Valve Design and Application	82
Fusing Thermocouple Leads	82
Linear Motion Transducer	83
December 1962	
Blast Furnace Control System	43
Oil Baths for Saturated Standard Cells	47
How You Can Analyze Costs of a Calibration-Maintenance Program	51
Relating Real-Time Programs to Systems Hardware	55
Process Analysis	59
Photoelectric Pressure Sensing	63
Hybrid Instruments	65
Etched Snap-In Plexiglas Sheet	65

OPERATIONAL MAGNETIC AMPLIFIERS

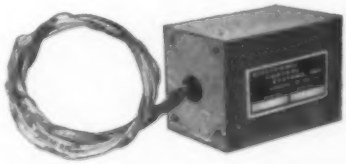


SERIES 100

- **Requires no additional power supply**
- **Uses 60-cycle power**
- **Input current less than 1.0 μa**
- **Requires no drift stabilization**

Ideal for analog computation, industrial control, and low-level amplification. Performs all functions associated with vacuum tube operational amplifiers, plus several added functions. **$70**

Zero and Gain Adjustments Available on Series 101



SERIES 200—Low Level Model

Ideally suited for use as a preamplifier with the Series 100. Also suited for thermocouple, photo cell strain gage, and galvanometer amplification.

Immediate "Off-The-Shelf" Shipment . . . or Send for Information

ELECTRONIC CONTROL SYSTEMS INC.

ELECTRONIC CONTROL SYSTEMS INCORPORATED

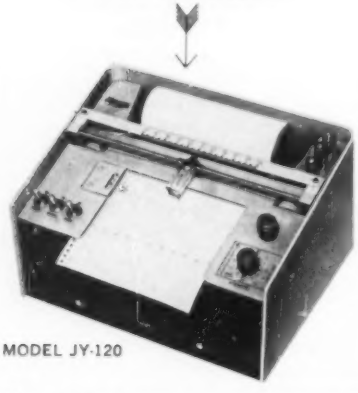
P.O. Box 1232 • Fairmont, W. Va.

Circle No. 49 on Reader Service Card

NESCO GRAPHIC RECORDER

MEASURES 1/100TH OF A MILLIVOLT.

Pen speed 1/2 sec. full scale



MODEL JY-120

Here is fast, accurate potentiometric recording at a low price—only $535.00. Both accuracy and sensitivity are ½% of span. Maximum signal source resistance, 50K ohms.

Step selection of ranges—from 1MV to 10V, provided by attenuator on front panel.

Minimum zero drift—due to a null-balance, servo-type, potentiometric, chopper-stabilized system.

2 other ranges available:
10 MV fixed span, Model JY-100 . $375.00
10 MV to 100 V, Model JY-110 . . $420.00

Write for JY Bulletins

NESCO

NESCO INSTRUMENTS, INC.
Manufacturers of Precision Recording Instruments
509 South Hindry Ave., Inglewood, Calif.

Circle No. 50 on Reader Service Card

AUTHORS INDEX

Authors	Page
Balise, Peter L.	May 18
Barnhard, Philip	Apr 42
Bergey, John M.	July 24
Bishop, John Jr.	May 41
Blitzer, Frank	Aug 33
Bloss, W. E.	Aug 53
Bonelle, G.	Aug 33
Bose, B. N.	Sept 89
Bramer, Henry C.	Sept 96
Bublitz, A.	Nov 57
Catz, Jerome	Apr 50
Cerni, Richard	June 29
Chass, Jacob	May 48; June 37
Cohen, R.	Oct 63
Connors, T. J.	Dec 43
Covey, C. W.	Jan 29, 37; Feb 29, 34
Crum, W. M.	Oct 64
Day, Emmett E.	Mar 42
Diament, Wm. A.	
Diehl, V. E.	Dec 51
Drinker, P. H.	July 43
Driskell, L. R.	June 24
Eckman, D. P.	Nov 57
Edelman, Louis A.	Apr 38
Elonka, Steve	Oct 67
Ewing, Galen W.	July 24
Field, Wm. B.	Feb 30
Forbes, J. A.	Mar 60
Forman, E. R.	Oct 59
Francy, R. A.	May 32
Friis, Bjron	Jan 48
Garey, J. J.	Aug 43
Gaul, Roy D.	Jan 50
Gilkey, K. J.	Nov 70
Gretton, Owen C.	Mar 47
Hamilton, T. R.	Mar 54
Hanssen, A. J.	Nov 82
Harmon, W. L.	Nov 70
Harrower, J. A. Jr.	Nov 65
Hart, Porter	Oct 53
Hassall, W. H.	Mar 60
Head, F. E.	Nov 74
Henke, Russell	July 33
Holben, E.	Nov 57
Howard, W. C.	July 62
Huber, F. C. Jr.	Sept 95
Kindler, Herbert S.	Apr 37
Kreisler, R. I.	Oct 55
Kriegsman, B.	Aug 33
Kupchinsky, G. E.	Nov 81
Leak, J.	Aug 47
Leszynski, Stan W.	July 35
Lovett, Orval P. Jr.	Feb 41
Lowrie, Patrick H. Jr.	Dec 47
McKinney, A. H.	Sept 81
Magison, E. C.	July 29
Maley, L. E.	Oct 49
Mandt, R. D.	Nov 82
Mears, F. C.	Jan 44
Meili, Jack	Apr 44
Meyers, Siegfried S.	Mar 51
Moore, Ralph L.	Sept 81
Morrison, R.L.	Nov 82
Murray, Wm. M.	Jan 30; Feb 47
Neblett, J. B.	Jan 44
Oerter, G. W.	Dec 55
Oriolo, D. J.	Oct 59
Ortman, G. C.	Dec 63
Osterman, J. P.	May 53
Perry, J. A.	Jan 42
Pohl, Peter	June 33
Rediske, A. C.	Nov 83; Dec 65
Reswick, J. B.	June 14
Richard, Richard R.	Sept 96
Riordan, J. J.	Aug 13
Robinson, P. B.	Sept 85
Ryan, Cornelius T.	May 41
Sanchez, J. C.	May 38
Sanders, C. W.	Nov 53
Schall, Wm. C.	Sept 69
Schols, J. A.	Feb 44
Shroyer, G. J.	Nov 70
Schuerger, T. R.	Sept 8
Schule, J. J. Jr.	Jan 50
Settelmaier, Robert G.	Sept 77
Singer, A. J.	Nov 81
Slater, Lloyd	July 47
Sprague, Philip A.	Oct 84
Stock, C. E.	Feb 44
Stockman, Charles H.	June 25
Teed, Jack T.	Feb 37
Tripp, Ralph H.	Jan 58
Wall, R. F.	Oct 64
Walsh, M. J.	Sept 96
Weiss, Marvin D.	Mar 22; July 9; Oct 7
Wildhack, Wm. A.	May 31
Williams, T. J.	July 39
Williamson, M. A.	Oct 51
Willis, F. M.	Apr 42
Wilson, Hugh S.	Jan 26; Feb 25; Mar 58; Apr 48; May 46; June 35; July 49; Aug 51; Sept 87; Oct 61; Nov 78; Dec 59
Wood, A. D.	Oct 63
Wright, W. V.	May 38
Yetter, E. W.	Nov 53
Youden, W. J.	Oct 57
Young, D. M.	Feb 44
Zorena, P. J.	Dec 43
Zoss, Leslie M.	Jan 26; Feb 25; Mar 58; Apr 48; May 46; June 35; July 49; Aug. 51 Sept 87; Oct 61; Nov 78; Dec 59

SUBJECT INDEX

Subject	Page
Actuator, Pneumatic	Feb 41
A/D Counting	Sept 95
Adaptive Control	Feb 30
Administration, Instrument Group	Aug 43
Analyzers, Optical	July 39 Apr 56; July 9, 39; Oct 7, 49
Analysis, Business	Sept 69
Analysis, Process System	Dec 59
Analyzers, Optical	July 39
Analog Computer Control	Nov 65
Blast Furnace Control	Dec 43
Block Diagram	Aug 51
Business, 1962 Forecast	Jan 37
Calibration Error	June 29
Calibration, In-Place	Mar 54
Chromatograph, Portable	Feb 44
Compendium, Transducer	Aug 39
Computer Control	Jan 44; Nov 53, 57
Control, Basic Principles of	Jan 26
Control, Definition of	Sept 8
Control, Electronic	Feb 37; July 43
Control, Pneumatic	Feb 37
Controller, Adaptive Three Mode	Feb 30
Controller Modes	Apr 48; May 46; June 35; Oct 61
Controller Settings and Tuning	Nov 78
Costs	Feb 37; Aug 13; Oct 59; Nov 83, 74; Dec 51
Courses, Summer College	May 35
Curve Follower	Apr 42
Differential Transformer	May 48; June 37
Digital Computer Control	Jan 44; Nov 53, 57; Dec 55
Diode Circuitry	Jan 42
Direct Digital Control	Nov 53, 57
Dynamics, Analyzer	July 39
Dynamics, Industrial	Sept 69
Economic Balance	Dec 51
Error	June 29; Oct 57
Facilities, Aerospace	Jan 40
FIER Awards	July 47
Flowmeter Testing	Mar 52
Frequency Response	Feb 25
Hazardous Atmospheres	July 29
Hydraulic Bridge	July 33
Installation Error	June 29
Instrument Construction	Apr 44
Instrument Repair	Jan 48; Oct 53
Instrument System Alternatives	Nov 74
Instrumentation, Definition of	Feb 34
Instruments, Electrical	July 29
ISA Annual Conference & Exhibit Program	Sept 99
ISA Executive Board Nominees	Sept 117
ISA Fellows	Oct 81
ISA Honors & Awards	Oct 78
ISA National Symposia Reports:	
Chemical & Petroleum	June 45
Power	July 55
Pulp & Paper	July 62
ISA Membership, Senior	Jan 38
Divisional	Jan 55
ISA President's Annual Report	Oct 84
ISA Transactions Editorial Board	Sept 122
Laplace Transformation	July 49
Management	Sept 77
Man-Machine Compatibility	Apr 37
Manometer	Oct 55
Marketing	Jan 37; Feb 34; Mar 47; Apr 38; May 41; June 24
Marketing Research	May 41
Mathematics, Control	July 49; Oct 63
Measurement	May 31; Aug 47; Sept 89; Oct 57
Metering	Oct 55
Moon Capsule	June 40
Motors, Instrument	Jan 48
Oceanographic Instruments	Jan 50
Open-Hearth Control	May 32
Optical Trackers	Nov 70
Pacemaker, Cardiac	Mar 51
Power Sources	June 42
Programming, Computer	Dec 55
Refractometer	Oct 49
Response, Closed-Loop	Sept 87
Response Error	June 29
Response, Open-Loop	Sept 87
Rocket, Propulsion	June 25; Oct 55
Salaries	Feb 46
Signal Conditioning	June 33
Simulator, Process Training	Mar 60
Spacecraft Control	Aug 33; Nov 70
Special-Purpose Computer	Nov 53, 57, 65
Stability, Control System	Mar 58
Standard Cells	Dec 47
Standards, Inspection & Calibration Survey	Mar 64
Statistics, Industry	Mar 47
Strain Gages	Jan 30; Feb 47; Mar 42; Apr 50; May 38; June 33; July 35; Aug 47; Sept 96
Strain Gages, Semiconductor	May 38; June 33
Taut-Band Suspension	Apr 44
Technician	June 14; Aug 53; Oct 51
Telemetering	Sept 85
Temperature Compensation	Sept 96
Thermocouple	Sept 89
Time-Shared Digital Control	Nov 53, 57
Training, Operator	Mar 60
Training, Technician	June 14; Aug 53
Transducers	Aug 39
Transfer Function	Aug 51
Valves	Feb 41; Oct 59, 64, 67
Variables, Control	Sept 81